

# Drawing test can predict subsequent stroke death in older men

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A simple drawing test can predict the long-term risk of dying after a first stroke among older men, finds research published in the online journal *BMJ Open*.

Despite treatment advances, stroke is still a leading cause of death and disability, with older age and impaired intellectual capacity (cognitive function) before a stroke associated with higher risks of death and disability afterwards.

The research team wanted to see if there was a reliable way of finding out who might be most at risk of a stroke death, based on cognitive function.

They analysed data from the Uppsala Longitudinal Study of [Adult Men](#), which has been looking at different [risk factors for heart disease](#) and stroke in 2322 men since the age of 50.

The current study is based on just under 1000 of these men who had not been diagnosed with stroke and whose intellectual capacity was assessed when they were aged between 65 and 75.

This was done, using both the Trail Making Test, or TMT for short, and the mini mental state exam (MMSE), which is widely used to test for dementia.

The TMT involves drawing lines with a pencil between numbers and/or

letters in ascending order, as quickly as possible, while the MMSE sets participants general [cognitive tasks](#) such as orientation, memory, and numeracy.

During the 14-year monitoring period from 1991 to 2006, 155 men had a first major or [minor stroke](#), known as a TIA (transient ischaemic attack). Just over half of them (84; 54%) died within an average of 2.5 years, with 22 dying within a month of their stroke.

After taking account of known risk factors, such as older age, [high blood pressure](#), education and [social background](#), those who had performed badly in the TMT were more likely to have died.

Men whose scores were in the bottom 30% were around three times as likely to have died after their stroke as those who were in the highest 30%. No such association was seen among those with poor MMSE scores.

TMT is likely to pick up latent cognitive impairments, caused by silent cerebrovascular disease that has not yet produced overt symptoms, suggest the authors.

The TMT tests are readily available, they say, concluding that they "may not only be used as tools for identifying risk of stroke, but may also be considered important predictors of post stroke mortality."

A reliable predictor of outcome could also improve the information provided to patients and their relatives, they add.

**More information:** The relationship between executive dysfunction and post-stroke mortality: a population-based cohort study. [doi 10.1136/bmjopen-2011-000458](https://doi.org/10.1136/bmjopen-2011-000458)

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